

REMARKS

Applicants respectfully request reconsideration and allowance of all pending claims. Applicants' new attorney, Christopher M. Goff, would like to thank Examiner Hand for her comments and courtesies extended during the December 17, 2007 telephone interview with John Poliak in the subject case. The rejections of the November 28, 2007 final Office action and a proposed claim amendment were discussed. Examiner Hand indicated that Suzuki does not disclose a polyurethane foam and the proposed amended claims likely overcome the rejections based on the cited references. No agreement was reached regarding allowable subject matter.

I. Status of the Claims

In this Amendment, claims 1, 3, 7-15, 17, 25, 30, 32, 35, and 41-43 have been amended. Specifically, claims 1 and 41 have been amended to require a single-layer absorbent structure that lies flat in a dry state. Support for these amendments can be found in the instant specification (as published in U.S. 2005/0228350) on page 1, paragraph [0007] and on page 4, paragraph [0048]. Additionally, claims 17, 30, and 42-43 have been amended to require the absorbent structure to comprise a polyurethane foam, as supported on page 6, paragraph [0069] and page 7, paragraphs [0072]-[0073]. Claims 3 and 7-15 have been amended to provide the proper preamble.

Additionally, claims 44-46 have been added. Support for new claims 44-46 can be found as follows: claim 44 (instant

specification on page 1, paragraph [0007] and on page 4, paragraph [0048]); claim 45 (instant specification on page 1, paragraph [0007] and on page 4, paragraph [0048]); and claim 46 (instant specification on page 6, paragraph [0069] and page 7, paragraphs [0072]-[0073]). Accordingly, claims 1, 3, 7-15, 17-22, and 24-46 are currently under consideration.

II. 35 U.S.C. 102/103 Rejections

1. Reconsideration is requested of the rejection of claims 1, 3, 7, 9-15, 17, 20-22, 24-26, 28, 29, and 38-43 under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over Suzuki, et al. (JP 2003-033381).¹

A. The Claimed Subject Matter

The present application is directed to an absorbent structure including one or more layers having differential swelling characteristics, which through controlled curvature can transform a flat planar material into one having desired shaping (paragraph [0001]). More specifically, the present application is directed to an absorbent structure that expands to a greater extent along one surface than along an opposite surface when in the presence of liquid. The more expandable surface causes an

¹ Applicants note that the Office failed to include the combination of Suzuki, et al. and Carlucci, et al. in the heading of the instant rejection. Applicants assume that this was a typographical error and that Carlucci, et al. should be evaluated under 35 U.S.C. §103(a). As such, Applicants will address the present claims relative to Suzuki, et al., alone and in combination, with Carlucci, et al.

increase in concavity in the X-Y plane of the structure, with the concavity being in the direction of the less expandable surface (see, e.g., paragraphs [0008] and [0051]). More particularly, claim 1, from which claims 3, 7, and 9-15 depend, is directed to a single-layer absorbent structure that comprises (emphasis added):

a first surface opposite a second surface, wherein the single-layer absorbent structure **lies flat in a dry state** and expands along the second surface in the presence of a liquid so that the first surface increases concavity, wherein a pocket-like shape is formed in the presence of the liquid, the single-layer absorbent structure expands to a lesser extent along the first surface than the single-layer absorbent structure expands along the second surface in the presence of the liquid, the single-layer absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater, and the single-layer absorbent structure has a thickness of about 10 millimeters or less in a dry state.

Claim 17, from which claims 20-22, 24-26, 28, and 29 depend, is directed to an absorbent structure comprising (emphasis added):

a body side liner;
an outer cover; and
an absorbent structure comprising **polyurethane foam** and having a basis weight between about 50 and about 1000 grams per square meter positioned between the body side liner and the outer cover, wherein the absorbent structure includes a first surface opposite a second surface, the second surface of the absorbent structure is bonded to the outer cover, the absorbent structure expands

along the second surface in the presence of a liquid so that the first layer increases concavity, wherein a pocket-like shape is formed in the presence of the liquid, the absorbent structure expands to a lesser extent along the first surface than the absorbent structure expands along the second surface in the presence of the liquid, and the absorbent structure has a fluid intake rate of at least about 0.5 cubic centimeters per second or greater.

Claim 30, from which claims 38-40 depend², is directed to an absorbent article comprising (emphasis added):

a body side liner;

an outer cover; and

an absorbent structure comprising **polyurethane foam** and having a basis weight between about 50 and about 1000 grams per square meter positioned between the body side liner and the outer cover, wherein the absorbent structure includes a first surface opposite a second surface, the second surface of the absorbent structure is bonded to the outer cover, the absorbent structure expands along the second surface in the presence of a liquid so that the first layer increases concavity, wherein a pocket-like shape is formed in the presence of the liquid, the absorbent structure expands to a lesser extent along the first surface than the absorbent structure expands along the second surface in the presence of the liquid, and the absorbent structure has a

² Applicants respectfully note that claim 30, from which claims 38-40 depend, has not been rejected under 102/103 over Suzuki, et al. As such, claims 38-40 are patentable over the Suzuki, et al. reference for the same reasons as claim 30. Applicants assume that this was a typographical error and, as such, will address claim 30 with regard to the instant rejection.

fluid intake rate of at least about 0.5 cubic centimeters per second or greater.

Claim 41 is directed to a single-layer absorbent structure comprising (emphasis added):

a first surface opposite a second surface, wherein the absorbent structure **lies flat in a dry state** and expands along the second surface in the presence of a liquid so that the first surface increases concavity, wherein a pocket-like shape is formed in the presence of the liquid, the single-layer absorbent structure expands to a lesser extent along the first surface than the single-layer absorbent structure expands along the second surface in the presence of the liquid, the single-layer absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater, and at least one of the first and second surfaces undergoes anisotropic expansion in the presence of the liquid.

Claims 42 is directed to an absorbent structure comprising (emphasis added):

a first layer having a basis weight between about 10 and about 150 grams per square meter that expands less than 10% in the presence of a liquid; and

an absorbent second layer comprising **polyurethane foam** and bonded to the first layer, wherein the absorbent second layer expands at least 20% in the presence of the liquid so that the second layer increases concavity, wherein a pocket-like shape is formed along an interface of the first and second layers in the presence of the liquid, and the absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater measured using the Fluid Intake Rate Test.

Claim 43 is directed to an absorbent structure comprising
(emphasis added):

a first layer that expands less than 10% in the presence of a liquid; and

an absorbent second layer comprising **polyurethane foam** and bonded to the first layer, wherein the absorbent second layer expands at least 20% in the presence of the liquid so that the second layer increases concavity, wherein a pocket-like shape is formed along an interface of the first and second layers in the presence of the liquid, the absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater, and only one of the first and second layers is elastomeric.

B. Suzuki, et al.

Suzuki, et al. is directed to a sheetlike absorption body having recessed and protruding parts and a self three-dimensionalizing function, which forms the recessed and protruding parts having a step between the recessed and protruding parts of 2A mm after absorbing water, when the step between the recessed and protruded parts is A mm when in a dry state. Specifically, the absorption body includes a P sheet made from nonwoven fabrics, cotton fabrics, and the like bonded to a Q sheet made from a nonwoven fabric. In one embodiment, the P sheet further includes superabsorbent polymers. Upon being wetted with water, the P sheet expands, thereby forming a concavo-convex structure.

Notably, however, with respect to claims 1 and 41, Suzuki, et al. fail to disclose an absorbent structure that **lies flat when in a dry state**. Applicants note that, in the Interview

Summary dated December 26, 2007, the Office stated that Suzuki, et al. show that prior to expansion, their article does not have any concavity, and is thus flat. Applicants respectfully disagree.

Specifically, as used in the instant specification, the absorbent structure is a **flat planar material** in the dry state (see, e.g., page 1, paragraph [0001]). Furthermore, as defined by Merriam-Webster, "flat" refers to a material that has "a continuous horizontal surface; being or characterized by a horizontal line or tracing **without peaks or depressions** (emphasis added); having a relatively smooth or even surface."³ Furthermore, "planar" is defined as "of, relating to, or lying in a plane; two-dimensional in quality"⁴, and "plane" is defined as "a surface in which if any two points are chosen a straight line joining them **lies wholly in that surface.**"⁵

By contrast, however, as shown in the Drawings, the P sheet in Suzuki, et al. has **one or more crevices** (i.e., peaks and or depressions) in the dry state⁶, which are formed by standing/folding the ends of the P sheet and Q sheet up in the vertical direction (see, e.g., Drawings 8 and 10), or by joining the P sheet and Q sheet intermittently (see, e.g., Drawings 6 and 12). Furthermore, as taught in Suzuki, et al. at paragraph [0025], the sheet-like absorbent is characterized in that the thickness in the dry state is 2.0 mm or less, suitably 0.2 mm to

³ Merriam-Webster Online, available at <http://www.merriam-webster.com/dictionary/flat>.

⁴ Id., available at <http://www.merriam-webster.com/dictionary/planar>.

⁵ Id., available at <http://www.merriam-webster.com/dictionary/plane>.

⁶ See e.g., Suzuki, et al. at Drawings 2, 4, 6, 8, 10, and 12.

2.0 mm.⁷ No where in Suzuki, et al., is it disclosed or taught that in one embodiment, its sheet-like absorber does not have at least one crevice (i.e., is a **flat, planar material**), as required in Applicants' claims 1 and 41. As such, Suzuki, et al. fail to teach each and every element of Applicants' claimed invention, and thus, cannot be said to anticipate Applicants' claims 1 and 41 under 35 U.S.C. §102(b).

In the alternative, it would not be obvious to modify Suzuki, et al. to arrive at an absorbent substrate that lies flat in the dry state as required in Applicants' claims 1 and 41. Specifically, as noted above, no where in Suzuki, et al. is it taught or suggested to form a flat, planar sheet-like absorber. More particularly, as suggested in Suzuki, et al., the crevice functions as an anti-leak barrier for preventing leakage from the edge of the absorbent product, and thus, Suzuki, et al. actually teaches away from using a flat, planar absorbent structure. As Suzuki, et al. fail to teach or suggest an absorbent structure that lies flat in the dry state, and further, there is no suggestion to modify Suzuki, et al., one skilled in the art would simply not have a reason to modify the Suzuki, et al. reference to arrive at the absorbent structure of Applicants' claims 1 and 41.

With regards to the dependent claims, the Office attempts to find each and every limitation of Applicants' claimed invention by combining the Suzuki, et al. reference with the Carlucci, et al. reference.

⁷ See Suzuki, et al. at paragraph [0025], wherein the sheet-like absorber forms crevices characterized in that "the level difference (A) of the irregularity (i.e., thickness of crevice) at the time of un-absorbing water (i.e., dry state) is desirably 0.2 mm - 2.0 mm."

C. Carlucci, et al.

Carlucci, et al. is directed to a disposable absorbent article, which is substantially flat prior to use for wearing adjacent a body discharge area, having a body facing surface and a garment facing surface. The absorbent core of the article includes an expanding layer and a separate, substantially non-expanding absorbent element joined together. The expanding layer expands the article into a tridimensional structure once activated by body fluids (i.e., once wetted). The expansion preferably takes place in a direction that goes from the garment facing surface towards the body facing surface of the absorbent article; particularly preferred are tridimensional structures with a **convex upward configuration** (emphasis added) that are inclusive of inverted U-shapes or inverted V-shapes.⁸ The expanding layer further includes apertures in its body facing surface and/or in its garment facing surface.

C. The Claimed Subject Matter is Not Obvious

As set forth in M.P.E.P. §2143, in order for the Office to establish a *prima facie* case of obviousness, three basic criteria must be met: (1) the prior art references, when combined, must disclose each and every element of the claim; (2) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to

⁸ Carlucci, et al. at column 6, lines 38-43.

one of ordinary skill in the art, to combine or modify the references; and (3) there must be some reasonable expectation of success. An obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of the case. The common sense of those skilled in the art can demonstrate why some modifications and/or combinations would have been obvious where others would not.⁹ As noted in the Examination Guidelines For Determining Obviousness Under 35 U.S.C. §103(a) in view of the Supreme Court decision in KSR Int'l Co. v. Teleflex, Inc., et al.¹⁰, the Office must provide an explanation to support any obviousness rejection. Applicants respectfully submit the Office has failed to establish a *prima facie* case of obviousness because (2) there is simply no apparent reason or suggestion to combine or modify the cited references to arrive at the claimed subject matter and (3) there is simply no reasonable expectation of success if the references are combined.

Applicants submit that there is no apparent reason to combine the Suzuki, et al. reference with the Calucci, et al. reference. More specifically, such a combination of references will frustrate the desired intent of the Suzuki, et al. reference, and as such, a close reading of the Calucci, et al. reference actually teaches away from such the combination of references.

Particularly, as noted above, Suzuki, et al. teach forming **concave crevices** to provide anti-leak protection in absorbent

⁹ Leapfrog Enterprises, Inc. v. Fisher-Price, Inc., No. 06-1402 (Fed. Cir. May 9, 2007); See also KSR Int'l Co. v. Teleflex, Inc., et al., 550 US _____, 2007 WL 1237837 at 12 (2007).

¹⁰ 550 US _____, 2007 WL 1237837 at 12 (2007).

products. By contrast, Calucci, et al. teach a substantially flat absorbent article when in the dry state that expands when wetted and forms a **convex upward configuration** to provide close contact with the body surface and improved absorption of bodily fluids. Thus, one skilled in the art would have no reason to modify Suzuki, et al., which is directed to forming a **concave-creviced article**, with the expanding layer of Calucci, et al., which expands in a **convex upward configuration**. Such a combination of references is simply not reasonable.

In view of the foregoing, Applicants respectfully submit that the Office has failed to meet its burden in establishing a *prima facie* case of obviousness, because motivation is simply not provided by the combination of Suzuki, et al. and Calucci, et al. references to prepare an absorbent structure as recited in claims 1 and 41, from which claims 3, 7, and 9-15 directly or indirectly depend. Accordingly, reconsideration of the rejection of claims 1, 3, 7, 9-15, and 41 is respectfully requested.

With respect to independent claims 17, 30, 42, and 43, Applicants' assert that the Suzuki, et al. reference, alone or in combination with the Calucci, et al. reference, fails to teach or suggest each and every limitation of the claimed invention, and thus claims 17, 30, 42, and 43 (and dependent claims 20-22, 24-26, 28, 29, and 38-40) are patentable over the cited references.

Specifically, as acknowledged by the Office in the Interview of December 17, 2007, neither Suzuki, et al. nor Calucci, et al. disclose an absorbent structure having an absorbent layer that includes polyurethane foam. Specifically

on page 2, paragraph [0013] of Suzuki, et al., materials for the absorbent P sheet are provided, however, no where is it taught or suggested that the P sheet can include polyurethane foam. Similarly, Calucci, et al. teach regenerated cellulose sponges and related materials for their expanding layer in columns 10-11, lines 36-53. No where, however, is it taught or suggested to use polyurethane foam in the expanding layer. As neither cited reference discloses each and every limitation of Applicants' claims 17, 30, 42, and 43, and further, there is no apparent reason to modify the references to arrive at each and every limitation, independent claims 17, 30, 42, and 43, and their dependent claims, claims 20-22, 24-26, 28, 29, and 38-40, are patentable over the cited references.

2. Reconsideration is requested of the rejection under 35 U.S.C. §103 of claims 8, 18, 19, and 30-36 as being obvious over Suzuki, et al.

Claims 8, 18, 19, and 30-36 depend from independent claims 1, 17, and 30, respectively, which are described above. As such, claims 8, 18, 19, and 30-36 are patentable over Suzuki, et al. for the same reasons as their corresponding independent claims set forth above, as well as for the additional elements they require.

3. Reconsideration is requested of the rejection under 35 U.S.C. §103 of claims 27 and 37 as being obvious based on the combination of Suzuki, et al. in view of Calucci, et al.

Claims 27 and 37 depend from independent claims 17 and 30. As such, claims 27 and 37 are patentable over the combination of

Suzuki, et al. and Calucci, et al. for the same reasons as claims 17 and 30 set forth above, as well as for the additional elements they require.

III. New Claims 44-46

New Claims 44-46 depend from independent claims 1, 17, and 30 and are patentable over the cited art for the same reasons as claims 1, 17, and 30 as set forth above, as well as for the additional elements they require.

CONCLUSION

In view of the foregoing, Applicants request favorable reconsideration and allowance of all pending claims.

The Commissioner is hereby authorized to charge Deposit Account 01-2384 in the name of Armstrong Teasdale LLP for any fees due for the submission of this Amendment and/or the Request for Continued Examination being filed simultaneously herewith.

Respectfully submitted,

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